THE MOTOR AGE

THE AUTOMOBILE AUTHORITY OF AMERICA

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VEHICLES OF THE TWENTIETH CENTURY

Born somewhere along in the nineteenth century, the commercial automobile as an established fact the world over marks the commencement of the twentieth. The year just closed has seen marvelous advancements in the manufacture and use of American motor vehicles. So adroitly has the experimental stage been combined with practical usage that in all of our large cities the auto is an everyday competitor with the horse for every branch of street transportation. Experimenters we are still, but makers and users also, and with the coming of the welcome new century the auto stands on a commercial foundation which assures permanent success and foretells of universal adoption before another hundred years shall have been swept bodily into history.

About two years ago there came a widespread demand for a suitable name for the self-propelled vehicle. Many were suggested and the daily and weekly press of the country had much fun discussing the relative merits of the different terms. There did not come, as the result, a bright, scintillating appellation suitable for general use. The trade, the public and the press continued to apply the terms which seemed most fitting to the different users. Now, however, in the dawning days of the new century's light, it is apparent that a specific title is neither necessary nor de-

sirable. The industry is outliving the need.

Grace a mechanical production with a particular title which distinguishes it from other and previous creations for similar purposes, and everlasting competition to prevent its universal adoption is inferred. To call the street vehicles of the twentieth century automobiles, continually and forever, acknowledges the immortality of the horse and its rolling appendage. But now we have vehicles without horses which are in direct competition with the equine equipages, and they are being so rapidly introduced into the commonest and the grandest phases of business, recreative and social life that their prestige will in the near future be insulted by the disgrace of a generic title. Motor vehicles will in a few years be just as much vehicles without the qualifying adjective as are now horse-drawn carriages, carriages without being distinguished by the adjective horse.

The twentieth century vehicles should be distinguished by the names which classify them into types; and the makers of catalogues, promoters of contests and exhibitions, and newspaper writers, are rapidly catching on to the necessity for such terms. Automobile means nothing when used in a descriptive sense. It simply signifies a vehicle without a horse, and as the wagon minus the horse has a much brighter future than the one with the horse, it is unduly favoring the old to describe the new with qualifying terms which advertise a drooping tail. To call a splendid electric, gasoline or steam vehicle a horseless carriage makes it an oddity, recognizes the supremacy of the horse, and classes it with such other curios as the legless man and the armless wonder.

The introduction of self-propelled vehicles into everyday use has been so rapid that the time has now come for common reference to them as vehicles of the types which they represent. For instance we have electric broughams and electric delivery wagons; gasoline runabouts and gasoline carriages; steam stanhopes and steam surreys. Every use to which the horse-drawn vehicle may be put is open to the introduction of the automobile. Therefore, it is seemly and right that the auto should be named by and for the use to which it is adapted, and only by such names can it be properly described and classed. Inasmuch as there are several standard types of power mediums, the peculiar title of each should be applied to qualify the term used to designate the kind of vehicle.

If there are to be horse-drawn vehicles for a while or forever, all right; but there are also to be electric and gasoline and steam; perhaps compressed air and other types of vehicles. The motor has come; it will not eat oats, but it will be stabled next door to the horse; it will clean our city streets of their overburden of traffic and put a new shine upon business airs. With the twentieth century it will seek new fields and enlarge successes already accomplished.

Let us have in the twentieth and best century, electric, gasoline and steam carriages. And let us use such terms as automobile and motor vehicle only in the sense in which they are meant to be used—when actually concerning all of the types of self-propelled vehicles as a single class antithetically to the whipped-up and gee-hawed variety.

The name electric vehicle will live as long as there are electrics; likewise gasoline carriage or steam wagon. The word automobile and its synonym will be expressive only to the time when as a common conveyance in metropolitan life the automobile exceeds the horse in numbers, prominence and usefulness. Welcome to the new century and the new industtry, neither of which depends upon the horse for a living or a qualified name.

WORK FOR AUTOMOBILE ASSOCIATIONS

CLUBS, MANUFACTURERS AND INDIVIDUALS ARE MORE DEEPLY INTERESTED IN HIGHWAY IMPROVEMENTS THAN THEY AT PRESENT REALIZE—CONCERTED ACTION NECESSARY—PREVIOUS EFFORTS AND THEIR RESULTS—DULL SEASON CAUSED BY BAD ROADS

Among people who have studied the matter sufficiently to realize the advantages which would result, the hope is frequently expressed that the day may come, very early in the new century, when the automobile will have taken the place of the horse-drawn vehicle to such an evtent that a horse will rarely be seen on a city street. That can never occur, however, so long as our streets and roads remain in their present condition.

Although it is customary, in deciding upon the objects for which automobile clubs are organized, to make brief reference to highway improvement, few members of the clubs, makers, or other persons, save those who for years have given careful thought to the subject, have the remotest idea of its importance or the difficulties which stand in the way of the establishment of satisfactory roads and streets. And yet to no class of people, save farmers, is the subject of so great importance.

Organized Effort Required

Ever since the highway improvement agitation started, nearly twenty years ago, the farmer has steadfastly refused to agree that the resulting advantages would, so far as he is concerned, warrant the taxes which would be placed upon him. The work and influence of cycling organizations, which first took the matter in hand, is not so important as it once was, and, although there are road improvement associations, all organizations in which automobiles play a part should be awakened to the necessity of organized effort, to the end that members may be enabled some day to operate their vehicles at all times of the year. As will be shown later on, the maker is even more deeply interested than the user.

Two-thirds of the filth of cities is due to the use of horses. Much of the noise comes from the same source. The reader may easily discover for himself that a number of the objections to life in a large city might be removed by the general use of self-propelled vehicles.

At a dinner last week one of the speakers remarked that the officials of large cities are prone to imagine that the streets on which cars run are the only ones which need particular attention. Residents of some of our western cities will agree with the speaker. In Chicago, for example, there are streets whose residents pay taxes for street improvements, but which the driver of an automobile dare not tackle at some parts of the year.

Effect on the Industry

City streets, however, are but a drop in the bucket. The great feeders, the roads leading to the cities, along which vast loads of our daily supplies are drawn, are equally important. Noise, filth, and all the other objectionable features must stay with us so long as we have bad roads.

During the early days of the automobile industry it was fondly hoped that it would not prove a business of seasons. Most of the makers, however, have already discovered that under existing conditions there will be a lull, if not a complete absence of sales, during the winter. People feel that the automobile is not designed for winter use. Men who own them have laid them by until spring, without being able to give any definite reason for so doing. The condition of the roads is primarily responsible. Through years of experience people have come to regard the roads as something to be shunned during the winter and early spring, for they have no confidence in their condition five miles from home, and therefore do not venture out.

The effect is already apparent. If peo-

ple do not use vehicles they do not buy them. A few months ago makers were overloaded with orders and were bemoaning their inability to fill them. To-day some of them are piling up stock for the spring, some with, and some without, a great deal of confidence in the future, for a dull spell always causes uneasiness. Those who are asking themselves why people do not buy may find an answer in the foregoing.

Until the time arrives when the owner may use his machine at all times of the year the automobile industry will have to contend with dull times during the winter. Buying will be active until the end of the summer and then will come a period of inactivity.

Results of Dull Season

Dull seasons are productive of some good and some bad features in every trade. There is one against which makers of automobiles are cautioned. As soon as they begin to realize that little business will be done in the winter they will so arrange their output as to hold as little stock as possible at the end of the summer. They will commence manufacturing for the new season as late as the circumstances will permit, so that their money may not be tied up longer than is absolutely necessary. In the interval they will make improvements and changes of patterns which will distinguish the new models from the old. Such changes are desirable, for they stimulate the trade by creating a desire on the part of owners to have the latest thing and, incidentally, by placing second-hand vehicles before buyers whose means to do not permit the purchase of new ones.

When the early machines were offered to the public there was an outcry about the price. The fact that manufacturers had been at great expense in the matters of experiment and equipment of factories was not taken into consideration. As soon as possible the makers announced a reduction, and it is doubtful if any of them now realize sufficiently large profits to warrant great experimental charges or costly equipment for the production of new features. On account of these and other facts, many manufacturers will argue that changes should be made gradually and as soon as improvements have been developed, and that the winter lull, with its temptations to undertake radical changes, will prove harmful.

Only those who are so situated that the matter of expense does not worry them can afford to ignore the necessity of good roads. The average man who can afford to buy a carriage wants one which he can use at all seasons. If he can operate an automobile only seven or eight months in a year, he will be likely to stick to the horse-drawn vehicle, despite his inclination to progress.

In England the lighter forms of motor vehicles, such as bicycles and tricycles, are more popular than they are here, a fact due, in no small measure, to the excellence of English roads. The same condition prevails on the Continent. Makers of vehicles of this class are therefore as deeply interested in the subject of road improvement as anyone.

The Great Factor, The Press

The most important factor in the fight for good roads is the press. The papers are, as a whole, favorable to the automobile, and the greater part of them will remain so just so long as users respect the rights of others and make no unreasonable demands. What the country editor may consider reasonable depends largely on the work done to convince him that the desire of the users of automobiles for road improvement is not entirely selfish, but will be as valuable to his farmer readers as to anyone else.

Fortunately for the movement, so far as city papers are concerned, users of automobiles are a superior class and people of considerable influence. Some years ago the wheelmen commenced a crusade for good roads. So long as the better class of people rode bicycles the papers were with the movement and assisted the efforts of the League of American Wheelmen and other bodies and individuals to secure reform. But as cycles became cheaper and within the reach of all, the upper ten ceased riding, interest in cycling waned and the papers dropped the agitation. The utmost care must, therefore, be taken to keep the

press in good humor and supplied with reliable argument and information.

The efforts of cyclists continued over a period of over ten years, and, backed by a number of men of influence and wealth, accomplished a great deal. Automobile organizations will therefore find the work of these pioneers extremely useful and have only to apply to some of the officers of the old organization to obtain valuable data, which took years to collect.

Must Satisfy the Authorities

It goes without saying that the authorities will be willing to do more for a class of people who take care not to give them unnecessary trouble than they will for men who are constantly before them for infraction of the law. The press has had to record, lately, so many accidents to pedestrians as to prove beyond doubt that drivers of autos either do not understand the machines they handle or pay so little attention to the law's requirements as to speed that they are unable to pull up in time to avoid accidents which no driver of a horse would cause.

In a majority of cases, strange to say, these accidents have been caused by drivers of vehicles used in the public service. Is it because they are incompetent and are hired without proper examination, or are they careless of the rights of pedestrians?

Harm Comes of Recklessness

These accidents are not calculated to cause the powers-that-be to look with favor on the auto or to cause them to aid any movement for the benefit of their drivers. The farmer is quite likely to argue, for a long time, as he did in the case of the cycle, that the auto is the toy of dudes and that the improvement of the highways, of the cost of which he must pay his share, is designed to benefit men and machines in which he has no interest. It is therefore unwise to place constantly before him reports of the escapades of reckless owners and drivers.

The moral of all this is that there should be concerted action on the part of makers, users, clubs, and all other persons interested. The Automobile Club of America, which is nearer a national organization than any other, the manufacturers' association and other bodies should take steps to co-operate with the road improvement associations already existing, to the end that the press may ring with a demand for proper attention to the subject by the authorities—municipal, state and national. They will find many men in high places ready and willing to help in the good work.

MAKING THE FARMER UP-TO-DATE

Any device in the automobile line which will interest the farmer will be regarded as a help to the trade and to the general development of the use of autos. We want better roads, and the only way it is possible to get them is by proving to the farmer that they are a necessity to him. The fact that it costs him millions every year to drive his wagons through oceans of mire has not yet aroused him to any enthusiasm over the proposition to tax him for better highways; but every wedge counts.

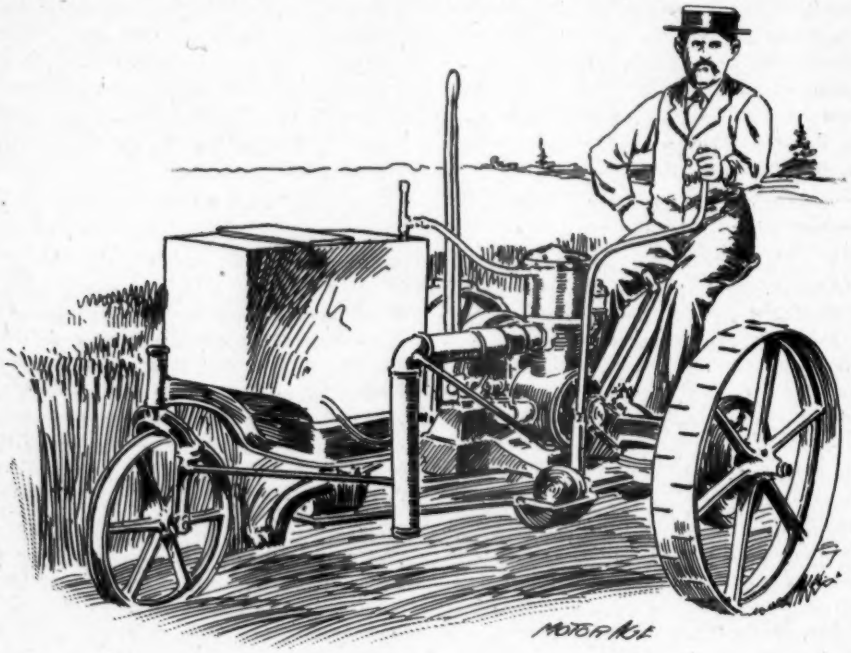
Therefore, all hail the automobile mowing machine. The farmer is already familiar with the self-propelled threshing machine which visits him every year. He will probably take as kindly to the newest invention.

There was described recently in the Motor Age a mowing machine driven by a gasoline engine and which was exhibited at the Paris exposition and tested in a grass field near Paris during the summer. This machine was the product of the Deering Harvester Co. Now the McCormick Harvester Co. salutes the public, and particularly the grass raising end of it, with a McCormick automobile mower. It goes without saying in

the implement business that the Deering and McCormick companies never lose a chance on either side of the bargain to keep abreast of each other, and the introduction of motor-driven mowers by these two mammoth implement concerns will doubtlessly lead to the production of similar machines by other harvester companies.

The accompanying illustration presents the general appearance of the McCormick auto-mower, and, if compact, practical looking construction is any criterion, it certainly auto-mow. The motor is a double cyclinder, 10-horsepower gasoline engine. The oil tank is divided into three compartments, one for oil, one for batteries, and one for water. Power is transmitted from the motor by sprocket wheels and chain to a friction clutch placed on the cross shaft of the mower. This clutch is so arranged as to engage either one driving bevel gear or another placed on each side, and in this way the machine can be run backward and forward at will. The bevel gears engage a pinion which serves to operate the flywheel shaft and cutter bar. They also transmit power to the mower wheels. The friction clutch is controlled by a lever placed at the foot of the operator. Steering is effected by a crank connected with the guide wheel in front of the cutter bar. The cutter bar can be lifted by the driver from his seat by means of a lever.

It is not necessary to consider the automobile mower as a fanciful creation, nor to conclude that the first models produced are simply advertising novel-



THE McCORMICK GASOLINE-MOTOR MOWER

ties. A mower as an agricultural implement is a comparatively easily handled machine. It is not as large or clumsy as a harvester and it can be turned in comparatively small space. In fact, it is always desired in using a mower to turn it as shortly as horses and tongue will permit. Thus the introduction of the motor as propeller enhances the convenience of the machine.

Being a comparatively small machine and being so designed that a motor and appliances can be readily attached to it without increasing its size remarkably, the adoption of motor drive is not only feasible but practicable, and the present introduction is only in keeping with other advances in the progress of the

automobile, and not a startling leap into the future, as some might imagine.

Mowers and similar harvesting machines, on account of the weight of their operating machine parts, have plenty of traction, and the character of the surface over which they ordinarily run is no serious hindrance to their successful operation, because high speeds are not necessary or desirable. It is also patent that as sickle knives and other mechanical parts of the machine must be driven, the working mechanism of the machine can be much simplified and increased in effectiveness when the power is obtained directly from an engine carried by the vehicle. As the automobile mower is supported entirely by its own wheels, the tilting and other operations necessary in properly adjusting the sickle knives to the cutting work to be accomplished can be controlled more conveniently and satisfactorily than in the horse-drawn mowers.

Mechanically speaking, the automower is a probability of the near future. It can be built, and demonstration has proven that it can be successfully and economically operated. Its mowing abilities should be much greater than those of the present style of mower. The most serious difficulty in connection with its introduction is the education of the farmer up to the limit of carefulness and ingenuity requisite to correct usage of such machines.

The average "agriculturist," to say nothing of the regular farmer, is accustomed to handling machines which can be repaired with a claw hammer and a 10-inch monkey wrench; be left in the snow and rain over winter, and pulled into usefulness covered with rust and dirt the subsequent spring. To use the self-propelled machines he must first learn to take better care of his property. The automobile harvesting tools will not stand the rough and abusive treatment which is the lot of the horse-drawn machines. Then the farmer must cultivate habits of care and patience in repair work and handling, or he will soon ruin an expensive piece of machinery, which, if well cared for and decently operated, will save him money year after year in the cultivation and reaping of his products. The automobile in various forms for farm use is coming, and the farmer had best be ready for it. He may be a bit scary about driving an engine of the "choo-choo" variety, but he can learn with the rest of the public, and there is no reason why he should be the last to tackle the proposition. If millionaires, dudes and dukes can master the science of automobile governing, surely the intelligent American farmer can learn to master a motor machine.

When the farmer plows his fields, garners his grain and hauls it to the market without other assistance than a modern motor, he will be the most enthusiastic good roads advocate in the land. The poor horse can be whipped, bullied and abused through miles of the mud that sticks, but a gasoline motor will do so much and no more, and if the task is yet greater on account of poor highways, it is a safe prediction that Mr. Agriculturist will see that "that there stretch of road beyant the Corners is fixed, be-gash."

THE ASSOCIATION WILL REGULATE SHOWS

The National Association of Automobile Manufacturers has adopted the only effective method in sight for the prevention of an excessive number of automobile exhibitions.

During the early meetings of the associations it was decided to take no formal action on the show question other than gathering information concerning them and leaving members to act as they please. In its issue of December 19 Motor Age pointed out that such a plan could not be effective. This is what it said:

It may have been wise, and doubtless was, for the manufacturers' association to take no active part in the regulation of shows during the early days of its existence or until efforts have been made to gather in those makers who have not yet become members, but it may be safely assumed that little will be accomplished by the present experiment. That shows are already too numerous every one is aware and, unless the pioneers are willing to sow the seed of which their followers will reap the harvest, such steps should be taken as will insure two shows and no more, and those two of national character.

As matters stand any individual or association has the right to promote a show and induce as many makers as possible to exhibit. The result will be that every maker will fear to refuse because of the fact that his competitor may take advantage of the opportunity to get ahead of him.

The inevitable result will be that shows will be promoted by persons who have not the remotest connection with the industry and, worse still, know nothing of the trade's requirements. No show so conducted can be profitable to the exhibitor. The crowd of dead-heads in attendance will not be the class of people to whom the makers desire to appeal and as a result sales, directly or indirectly, will be conspicuous by their absence.

Plainly then, shows, if any are to be held, should be promoted by people who know the industry, know the class of people to draw and the way to draw them. Incidentally the shows should be so conducted that they will not be an unnecessary drain on the treasuries of the exhibitors.

It may be that in the course of time members of the trade will come to the conclusion that shows should not be held in the same cities every year, but first of all they must find ways and means to limit the number to be held anywhere.

Members of the association have been advised that at the last meeting of the executive committee a resolution was adopted which is the first step toward the regulation of shows by the men who make them possible. It is likely that the natural development of the trade will make it impossible to prevent shows being more or less successfully held, but it will be possible to prevent participation therein by members of the association, who are likely to include a great majority of the principal makers.

The resolution adopted is as follows:

Whereas, numerous automobile shows have been and are being projected throughout the country, and coercive methods have been adopted by some of their projectors to induce manufacturers to exhibit at such shows; and

Whereas, it is important to secure uniformity of action among the manufacturers and prevent a multiplicity of shows;

Therefore resolved, that the executive committee of the National Association of Automobile Manufacturers recommends to the members of the association that they refrain from entering into any contract to exhibit at any proposed show, until such shows shall have received the official sanction of the association.

The principal events pending are the two shows at Philadelphia and the National Exhibition at Chicago.

The promoters of the latter expressed a desire to have the makers co-operate with them at the time the association was formed. In a letter addressed to the meeting at Madison Square Garden they told of having retired from the field to make room for the Inter Ocean show last fall, and said:

"We do not feel disposed to again retire in favor of anyone except an association which shall be truly representative of the interests of the trade. Should your meeting result in the formation of such an association, and we

trust it will, we shall be pleased to confer with the officers or a committee for the purpose of arriving at such understanding as shall best serve the interests of the trade as a whole."

They have filed with the secretary of the association an application for a sanction and have again expressed their willingness to confer with a committee or the officers of the association.

FOR AND ABOUT AUTOMOBILE CLUB MEN

The desire to excel in all things has led many Americans to emulate and strive to outdo the French at their own game. While our makers are content to make machines with a maximum speed of about twenty-five miles an hour, some of the more enthusiastic drivers have been using imported machines or those made to order at home for racing purposes. The law does not countenance such bursts of speed as have been credited to some of the eastern owners and it is pleasing to note, therefore, that there is a tendency toward more rational pace.

TWENTY-FIVE MILES SUFFICIENT

Malcolm W. Ford, who, since his retirement from athletics, has been heard of but rarely, but has now blossomed out as an auto expert, writing on the question of speed, says that twenty-five miles an hour is considered by manufacturers to be fast enough for all practical purposes. If more speed than this is possible, the places are so few and far between in this country where real fast traveling can be engaged in, that the machine is seldom allowed to show what it can do. Then, most carriages built for faster traveling than twenty-five or thirty miles an hour must be built specially for such service, and carrying capacity is sacrificed.

MACHINERY MONOPOLIZES SPACE

The same mechanical principles regulate this question of automobiles as in torpedo boats, the machinery of the latter monopolizing so much space in the craft that there is little left to make the boat useful. People surely do not want similar conditions in an automobile, and yet, according to manufacturers, up to recently the average inquirer about horseless vehicles expected almost the endurance and carrying capacity of a freight steamship combined with torpedo boat speed.

The head of a large concern that is turning out three or four important classes of automobiles recently said that up to a few months ago three-fifths of intending purchasers put much stress on speed, the other two-fifths wishing merely a good all-around vehicle.

THREE-FIFTHS WANT SENSIBLE WAGONS

"Now, however," he continued, "the situation is reversed; three-fifths want a sensible wagon and two-fifths still insist upon speed. The subject will resolve itself in time to about four-fifths for all-around usage and one-fifth for speed, and this condition may be reached in another year. But this separation of classes has only to do with pleasure vehicles, for it can readily be seen that in machines made for commercial purposes speed will seldom be thought of. Such vehicles are in a class by themselves, and although in time they will engage most of the energies of the manufacturers, they are not doing so yet, and vehicles for pleasure form the only basis for computation."

BOSTWICK'S COMFORTABLE VEHICLE

Ford says his own experience in traveling at speed is probably a fair sample of that of the majority. Having ridden in many classes of vehicles, he is able to draw comparisons that should not be far away from facts. When going at thirty miles an hour one, of course, will not have the same comfort on a

high-built vehicle with a comparatively short wheel base as on a long, low car, with plenty of length of wheel base, like, for instance, Albert C. Bostwick's, which is without doubt one of the steadiest riding vehicles in this country.

A BIG BRITISH TOUR

The British 1,000-mile automobile run is to be repeated. Last year it was a complete success and much valuable data was collected, as a result of which builders have been able to make such improvements as to warrant an attempt over a more difficult course. The tour will commence on August 12. The route will be from London to Plymouth, on the south coast, and over some of the best roads in the kingdom; through the western counties, stopping at Bristol, to Carlisle; to Glasgow. At the latter point the exhibition will be in progress and it is intended to place the vehicles on exhibition for a few days. The tourists will return by way of York, Lincoln and Norfolk. The average distance per day is intended to be about 100 miles.

LONG ISLAND CLUB ACTIVE

The Automobile Club of Long Island held its annual election last week at 552 State street, Brooklyn. The following were elected: President, L. R. Adams, Jr.; vice-president, Robert Darling; treasurer, Frank G. Webb; secretary, Charles W. Spurr, Jr.

A story is afloat to the effect that an enthusiastic member of the club has decided to give it a home all ready for occupancy. It will be in an accessible location and the building will contain the usual clubrooms, including also lockers and sleeping rooms and a library with automobile literature.

The club held a run two days before Christmas, going to the summer home of the Crescent Athletic Club at Bay Ridge. Some of those who took part were President Louis R. Adams, Secretary Charles W. Spurr, Jr., Cornelius J. Field, chairman of the technical and contest committee of the Automobile Club of America; L. A. Hopkins, A. H. Waterman, Arthur R. Pardington, R. E. Jarrige, Robert Darling, D. H. Darling, Jr., T. T. Craven, Frank G. Webb, Charles Rockliff and S. Hunt Smith. Dinner was served, after which the calvacade took its way to the Brooklyn Yacht Club house at Bensonhurst, by way of the Shore road and Cropsey avenue. A short stop was made there, after which the return journey was made via Bay Parkway and the Ocean Parkway.

THE "CHERBOUSKY" IS FAST

Harry Elkes used his newly imported "Cherbousky" motor tandem in his recent race with Jimmy Michael at Madison Square Garden. He was victorious by a lap and three-quarters and established new indoor world's records. In an exhibition ride on the Thursday evening previous Elkes following this motor made a mile in 1:36 1-5, a new world's indoor record and a marvelous performance on a ten-lap indoor track.

A COMPARISON OF COSTS

Frequent attempts have been made to determine the relative cost of maintaining autos and horses, but the tests, such as they have been, have always been made by persons who may have favored one side or the other, and have not, for that reason, been entirely satisfactory.

Perhaps one of the most reliable reports so far made comes from the members of the Brooklyn Club, many of whom own autos and horses and are not particularly interested, to a few dollars, in the cost of either. They have found that it has cost them about the same amount to run their automobiles as it has their horses, but in view of the fact that the latter have been driven only one mile to the former's four, the cost per mile has been largely in favor of the mechanically-propelled vehicle.

PETITION IN GOOD HANDS

Senator Thomas C. Platt has taken in hand the bill to be introduced in congress for the repeal of the law which now makes it impossible for gasoline vehicles to be carried across the New York ferries until their tanks have been emptied. The committee of the Automobile club is convinced the restriction will be removed in due course and re-

ports that the ferry officials are unanimous in their expression of approval of the movement.

COURT'S IMPARTIAL RULING

A decision recently rendered by Judge Hutchinson, of Rochester, may prove a valuable precedent, and is therefore well worth noting. The judge reversed the decision of a lower court which had awarded damages to a driver whose horse took fright at sight of an automobile. In annulling the verdict the court

No Explanation Needed.

said that "the horse has no paramount or exclusive right to the road, and the mere fact that a horse takes fright at a vehicle run by a new and improved method does not give the injured party cause for action." Judge Sutherland added that in order to obtain damages evidence that the steam carriage was managed carelessly or that rules of the road were disregarded must be submitted. In the absence of such testimony the decision of the court below was reversed. Another point emphasized was that exhaust steam could not be declared a nuisance if kept within reasonable limits.

The erection of signboards on country roads is one of the features of interest taken in hand by the Indiana Automobile Club, just organized at Indianapolis.

"I made two automobile trips throughout Indiana last summer," said President Fisher, "and covered nearly a thousand miles. In all this riding I saw but two signboards. One of these was so weather-worn that it could not be read. Signboards are one of the many conveniences that can be added to country travel, and our club will have for its object the furthering of all such schemes. We want to make country travel a pleasure, and all such things as good roads, signboards, drinking places, and the like, are of material advantage."

The club hopes to enlist in its membership all the automobile owners and motor cycle riders in the state. Its objects will be both social and business. Its officers are: President, Carl G. Fisred; vice-president, Louis Bentley; secretary, August Habich; treasurer, F. A. Moore.

The Gloucester (N. J.) Ferry Co. has issued an order to the ffect that automobiles propelled by naphtha or gasoline will be carried on the freight boat on Tuesdays and Fridays, and that on other days they will be carried provided the owners will empty the tanks of the fluid before going aboard the boat. This last order is similar to the one in vogue at the upper ferries. The report does not say whether they are to be carried on the freight boats only on the days named, or whether this action is designed as a slight concession to owners of autos.

Facetious newspapers are having all sorts of fun at the expense of W. K. Vanderbilt. The owners of old plugs on Long Island as said to lie in wait for him and his "White Ghost" for the purpose of getting them killed off and paid for at a profitable figure. The New York World suggests the general adoption of the sign here shown.

Commodore Charles T. Wells of the Indian Harbor Yacht Club and his auto were lately instrumental in saving a lot of valuable property from fire. The trouble started at 40 West Forty-seventh street, New York, and Mr. Wells, who

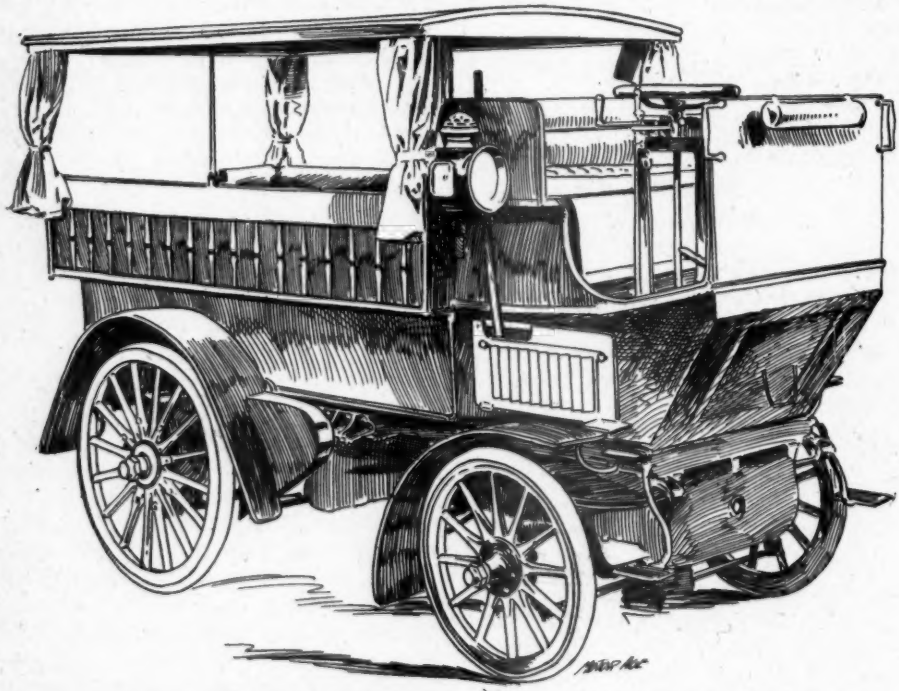
happened to live in the neighborhood, hustled out his machine and notified the fire department before any other person had collected his wits.

Albert Brown, an undertaker at Oakland, Cal., believing that people in his vicinity are dying for a ride in an automobile, has ordered a gasoline "morgue wagon."

R. Lindsay Coleman, president of the American Bicycle Co., was recently elected to membership in the Automobile Club of America.

bus and suggests the idea of having been purchased by the prince in his halcyon days as a safeguard against lack of chance to earn a livelihood should old age find him in royal misfortune. Imagine the Prince of Wales driving a gasoline omnibus through the streets of London!

But to return to the carriage; it is fitted with a 12-horsepower four-cylinder Daimler motor of standard pattern, and has comfortable seating accommodation for fourteen persons. The driver's seat is placed in the unusual position of above the motor instead of back of it as in ordinary Daimler construction.



MAMMOTH GASOLINE CARRIAGE BELONGING TO THE PRINCE OF WALES

ROYAL CARRIAGES FOR THE ROYALTY

His Royal Sportingness, the Prince of Wales, is an autoist and he has set out to enter the new sport in real royal fashion. He owns three motor vehicles and all are gigantic in the measure of ordinary sizes. He has one regular 12-horsepower Daimler wagon whose rear seats are covered by a hood, but his most royal outfit is the Titanic machine here illustrated. Though a private and exclusive conveyance it resembles an omni-

The good people of Herkimer, N. Y., who once had a chance to secure the Remington Automobile Co. and let it slip through their fingers, are now anxious to secure it and have been actively engaged lately in raising a subscription for the purpose. They have just been notified by Manager Holmes, however, that the company is not prepared to entertain any proposition.

THE DOCTOR COULD NOT CURE THE AUTO

Dr. A. M. Hard, a physician of a North Dakota town, owns up, in a story of personal experiences in driving a steam carriage, to being so foolish as to blame the carriage for his own carelessness. Below is the story of his troubles as told by him in a daily paper:

South Dakota's prairie roads are boulevards ten months out of every twelve, so I determined to buy an automobile. After posting myself somewhat on the merits of different kinds, I ordered a steam vehicle as probably most suitable for country practice.

Following an exasperating delay, the first automobile to be used by a country doctor west of the Mississippi arrived, with a freight bill attached of five times first-class rates.

Quickly collecting a few ever-ready-to-pay bills, I pacified the railroad trust for a time and the vehicle was conveyed to a previously prepared automobile barn nicely fitted up with all conveniences.

It was a beautiful creation, this saucy looking horsedisplacer. Its shape was stylish and neat, its wheels were artful and its machinery was truly bewildering.

Having had previous mechanical training, however, I soon found out the whys and whatfors of each of the many needle valves, check valves and operating levers, and the following day I fearlessly got up steam and took a ride.

The strange appearing vehicle had the usual effect of any extraordinary novelty upon the proletarian natives, and their necks betrayed great elasticity.

I will pass over many of the lesser interesting details of the next two weeks' experience, and relate a tale of woe describing one particularly troublesome trip.

I received a "rush" call one afternoon to go twelve miles north to set a broken limb. What could be more appropriate than an automobile trip?

I succeeded in getting up steam with but a few scorches from flaring flames, and after fifteen minutes of very violent exercise filling the air tank with the very poor air pump furnished with the carriage. I soiled my hands to the usual amount oiling the little engine placed in the most inconvenient place possible, and then glanced at the water-glass to satisfy myself that the boiler was properly supplied. It was full, and with elation I bounced into the seat, grasped the levers and started. I cannot find words outside of the French language to adequately describe the poetry of motion of a ride in a steam carriage. The seemingly live being glides along in a manner which is perfectly entrancing—until something happens.

I had sped down through the main street of the little village, admired and envied by all who gazed, and had just turned on the level country road when I noticed flames and smoke coming up beside the buggy, back of the seat. I hastily dismounted and turned off the fuel, but not quick enough to save the delicate paint on the sides of the vehicle, which was badly blistered by the heat. It seems that steam automobiles are not intended to be used in windy weather—a fact which I had failed to bear in mind. A few moments' thought, a convenient piece of old tin bent around the fire box as a wind guard, and I was again sailing along over the smooth road at the rate of fifteen miles an hour, but I was watching the fire more closely than before.

About five miles out I came to a long, narrow grade and had the misfortune to overtake a top buggy drawn by a span of colts. Two women, one holding a baby in her arms, were leisurely driving and were holding the half-mile grade to my exclusion. Requesting them to care for their team while I tried to pass, I boldly turned down into the deep ditch on one side and with a full head of steam, trundled along over the uneven ground. When opposite the horses the puffing of the engine caused them to shy a little,

and as usual the women dropped the lines and screamed. In an instant I had shut off the steam, and jumping to the ground I caught the now frightened horses by the reins, and they immediately quieted down. I asked the ladies to get out, a precautionary measure which I afterward did not regret, and while the one without the baby held the horses by the bridles, I started for the automobile to resume my journey. These steam carriages rapidly accummulate steam pressure when standing idle, and just as I placed my foot upon the step to mount, the safety valve opened with a terrific blowing sound and a big cloud of white steam. As I turned my eyes toward the road I saw the team and buggy clearing the opposite ditch at one jump, and before I could tell what to do they disappeared over a knoll of the prairie.

I asked the ladies to wait—a very unnecessary request—and was soon speeding down the road after the flying team. I calculated to catch the horses and return them to the ladies—alas for poor calculations—but after going about five miles I neither saw them nor could I find any person who had, and I stopped five minutes and thought deeply. My patient with the broken leg was only two miles away, and at the conclusion of five thoughtfilled minutes I determined to go at once and do my work and return later to resume search.

In one short hour I had put on a Bavarian splint and was ready to start back. It was about five o'clock and the sun was fast approaching a dark bank of clouds in the west. Lighting my gasoline burner I watched the steam gauge needle slowly swing around until it pointed to forty pounds, and for some mysterious reason it refused to go farther. While looking for the cause the safety valve opened, indicating a pressure of two hundred pounds, and I at once discovered that my tubes were filled with sediment.

For another hour I worked—how I worked—with wrenches and wires, bent double and crooked, until the bothersome pipes were once more free from mud and ready to convey water and steam.

When steam was again up to a working point it was after six o'clock, and a storm was fast approaching. I thought of the women and the baby waiting by the grade, and disregarding the threatening weather I opened the throttle and started at high speed down the road. I had gone scarcely a mile when my steam pressure began to subside, and the carriage to slow down. With a fierce look of dismay I discovered that my boiler was dry—the pump had failed—and the intense heat of the powerful burner had ruined the flues. I well knew what this meant; the thing had balked and nothing but a skilled machinist and a five-dollar bill could make it run. The rain commenced pouring down and it was dark as I started back on foot to seek shelter in the house where lay my patient with the broken leg, and she smiled in the midst of her pain when she heard the tale of the helpless automobile, the two women and the baby and my appearance when I entered the house.

The next morning the farmers' plug team hauled the inglorious steam buggy back to town, and we went down a back street and through an alley to get into the barn. My automobile is now for sale cheap.

Members of the Automobile Club of America are congratulating themselves on having secured quarters in the immediate neighborhood of Central Park. They will be within three blocks of the Metropolitan, Athletic, and University Clubs. The address of the new rooms is 753 Fifth avenue. They are to be handsomely fitted up and will be ready for use the first week in February.

It may as well be accepted, first as last, that there will be rivalry between automobile clubs and that no club will long be permitted to enjoy a monopoly of any city. Boston already has two clubs, and so has Brooklyn. Chicago will probably follow suit as soon as seasonable weather prevails. The Brooklyn clubs have been considering an amalgamation, but have finally decided against it, the Automobile Club having secured quarters at the Clarendon Hotel, and the Long Island A. C. at 522 State street.

FROM THE FOUR WINDS

That gigantic gasoline carriages are not as fierce as they appear to be to the uninitiated is demonstrated by the above illustration, showing a very small woman as sole manipulator of a very big vehicle. She is an English lady, Mrs. Copeland, and she can competently manage the carriage under all ordinary conditions, being able to handle it with dexterity in the thickest traffic of London.

AMERICAN BUSSES FOR LONDON

London, Dec. 26.—Not content with making underground railways for London, our enterprising Yankee cousins now contemplate the regulation of our overground traffic as well. An American sydicate proposes to start four experimental lines of automobiles through some of the principal thoroughfares of the metropolis. There will be five motor omnibuses for three of the routes to start with, each of these vehicles carrying eight passengers inside and six outside, while on the fourth route, along Piccadilly, motor hansoms will be run. If the experimental lines turn out as well as they are expected to do, they will be at once extended, and new routes will be started.

FOR THE FIRE LADDIES

The first self-propelled fire engine in this country—and probably in any country—was operated in Hartford and today does excellent service when called upon. It invariably distances all other engines in the run to the blaze. For three or four years past moving picture machines have shown the engine in action, to the delight of thousands of people. The machine was made by the Columbia Automobile Co., the company organized by Colonel Pope and now owned by the big electrical combine.

The example thus set is to be followed by Pittsburg, J. O. Brown, director of the Department of Public Safety, having received word that a machine is now on the way from Manchester, N. H., where

it was recently completed. Its cost was about $9,200.

Although from a sentimental standpoint the public would doubtless be disappointed to see the horse displaced in this branch of the public service, the greatly improved facility the auto affords the department will doubtless lead in a few years to its general adoption.

Chief Croker of New York also wants to be in line. He has been testing machines and has imbibed the usual resultant enthusiasm.

"I need an automobile, and need it badly," he said. "My territory extends from City Island to Coney Island, and four horses a day are not enough to carry me to fires.

"I think eventually there will be automobile engines, trucks and hose carts."

FASHIONABLE HOTELS IN LINE

Here is a hint for progressive hotel men. It comes from Lakewood, N. J.:

"The automobile has at last invaded this little village, the Lakewood Hotel having added half a dozen handsome electric vehicles to its livery service. Over the smooth, well-kept roads through the pines in an automobile is a new diversion for the guests of the Lakewood. The sport has become so popular that doubtless the other hotels will soon fall in line. George J. Gould and his imported automobile speeding through the village is now a familiar spectacle. He recently made the run from Lakewood to Toms River, a distance of twelve miles, in twenty-two minutes."

FUEL CONSUMPTION CONTEST

On December 8 an important road race was run near Milan, Italy. It was called a "consumption" race, the amount of fuel used by each of the contestants figuring in the award of prizes. The course was nearly twenty-three miles. The vehicles were divided into three classes according to weight. The winner of the contest for carriages of the first class (machines not weighing over 400 kilos) succeeded in covering the distance with a consumption of less than three liters of gasoline.

STEAM VEHICLE DEFIED COLD

That it is quite possible for an experienced driver to handle a steam vehicle in cold weather was recently demonstrated by Winslow E. Buzby on a trip from New York to Bridgeport and return. It was on the occasion of the run of the Automobile Club and it was predicted that no steam vehicle would complete the journey. Mr. Buzby's experiences will be valuable to all users of similar vehicles, and are here detailed in his own words:

"After leaving Astor court the machine traveled very nicely, but we had gone no further than Fifty-ninth street when I noticed that the steam gauge registered 140 pounds, the throttle pretty well open, and yet we were not going fast. This would be unusual in a locomobile, for with a wide-open throttle and that steam pressure, we should be going altogether too fast for Fifth avenue. Pretty soon the hand on the gauge went up to 180 pounds, and still our speed did not increase, the throttle remaining where it was. I came to the conclusion that the steam in the pipe leading from the boiler under the seat to the gauge on the dashboard had condensed and the water had frozen.

"What probably made the pressure go from 140 to 180 pounds was the expansion of the ice in the pipe. It is doubtful if all this time there was over 75 pounds pressure in the boiler. Next our water gauge froze up, and I could not tell how that important part in steam machinery was. Had it not been for my friend, Mr. Jones, I do not think I could have continued.

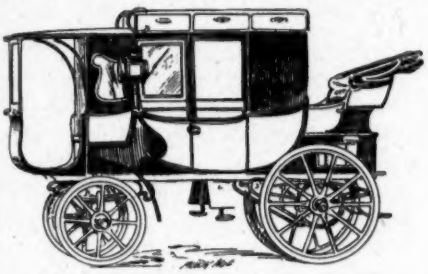
"The rest of the trip I pumped water into the boiler, guessing at the quantity needed, and judging the steam pressure as best I could by feeling the pressure on the throttle. So far as I can see, the machine is not injured in the least.

"Even had there been no water, the boiler simply would have burned out. Neither Mr. Jones nor myself was afraid of an explosion, for such boilers are

made practically non-explosive. If the pressure becomes too great they open up at some part gradually, and therefore allow steam to escape."

DESIGN OF MOTOR STAGE COACHES

Vehicle builders in Europe, as well as in the United States, are now studying the problem of suitable designs for automobile stage coaches. The fast increasing demands for rapid transit stage



Proposed Auto Stage Coach

lines is bound to develop many new styles of motor vehicles intended especially for this purpose. The accompanying illustration presents a design recently suggested by a Frenchman and which may be of service to American builders.

ENGLISH SPEED LIMIT WAR

There is war between the country authorities of England and the owners of automobiles, a war which has its special interest for us because it speaks so unmistakably of the fine country highways which we have not. What has the American farmer to do with the automobile or its speed, or how is it likely to concern him for some time to come, when a high speed would be quite out of the question much the greater part of the year on nine-tenths of the roads in the rural districts?

In England, however, legislation and controversy prove that country riding is very common and that the speed maintained is far above what would be considered practical here, comments the Chicago Times-Herald. In 1896 an act of parliament was procured which limited the speed to 14 miles an hour, and a little later the regulations of the local government board under this act decreased the maximum to 12 miles. Then about a year ago the executive committee of the County Councils Association passed a resolution "in favor of compelling all 'light locomotives' to carry a distinguishing mark or number for purposes of identification."

Upon this the Automobile Club unlimbered for action and began an epistolary fire upon all the county councilors in England. Arguments were made both against the numbering and against a reduction in speed which was proposed, and between these points a correspondent of the London Times discriminates as follows: He says that the question of numbering is a question of opinion, but that the question of speed is already so well decided that it should admit of no debate. "It is certain," he adds, "that a motor car is under just as perfect control at 12 miles an hour as it is at 10, and that to the dog who is unfortunate enough to be run over, two miles an hour, more or less, makes no difference whatever."

It would appear, however, that the law regulating speed is frequently violated by individuals of the "scorcher" class, and although the correspondent condemns the violation, he holds that the automobile is the most harmless and docile of machines. He declares that there is less danger from one than from a fast dog cart, because the motor car is under comparably better control.

Whether it is a fact or not, the Automobile Club is diplomatic rather than dictatorial. It knows the conservative customer with whom it has to deal, and suggests that, as in France, no person should be allowed to drive an automobile until he had obtained a certificate of his capability to do so. The Times correspondent, however, makes a more insidious suggestion. He would have the forbidding councilors experiment with the machine themselves, so that they may be overcome by its fascinations. "They will," he says, "be surprised, pleased, and converted." Either that or they should be smashed and there would be an increased number of dead dogs.

NEWS OF THE MOTOR INDUSTRY

ELECTRIC VEHICLE MOVES TO HARTFORD

New York, Jan. 1.—(Special Telegram.)—The Electric Vehicle Co. will probably celebrate the opening of the new century by moving its headquarters from 100 Broadway, this city, to Hartford, Conn., where one of its principal plants is located and where President George H. Day resides. A Motor Age man, attempting to verify the story in Hartford on Saturday, was referred to Mr. Day for information concerning the gigantic corporation's new move. Mr. Day, however, was away on New Year's day celebration bent, and his leading man could not be found. A department chief said that he had received orders to remove his desk from the Broadway office before the end of the old year, but added: "I am told there is a possibility that the order may be countermanded."

It is understood that the change is due to the need of having all departments at one address and that the study of economy has also been taken into consideration.

TWO CITIES WANT FACTORY

The records of the Secretary of State of California recently marked the incorporation of the California Automobile Co. That organization is now reported to be preparing to enter actively and aggressively into the manufacturing end of the business, despite the fact that it is an extremely uncommon matter to operate a successful industry in which the base of supplies is at the other end of the country.

B. L. Ryder, the manager, was recently in Petaluma trying to interest the Board of Trade in a proposal to furnish his company with three acres of land for a factory site. He made the statement that his company has $150,000 to do business with. He seems to have been successful in his effort to prove that the industry would be a desirable one for the community, for after consideration the city offered the necessary bonus.

Then came another offer. If any good things are going around Oakland wants some of them, and so the Board of Trade instructed its secretary to notify the company that it is prepared to furnish a satisfactory site. The California company's offices are at 222 Sansome street, San Francisco, Cal.

REDUCED RATES TO CHICAGO

The management of the First National Automobile Exhibition, to be held at Chicago in March, have been advised by the Central Passenger Association that a rate of one fare and a third has been granted from all points in its territory. Applications are on file with all of the principal associations. Details will be furnished from time to time in the show's weekly Bulletin.

The Chicago show management has commenced to issue a Weekly Bulletin, of which 10,000 copies will be distributed. They are intended to reach persons interested in vehicles in and out of the trade. Exhibitors and the trade generally are requested to send names of such persons to the Motor Age, Monon building, Chicago.

OVERMAN OPENS HIS VEST

Chicopee, Mass., Dec. 28.—Repairs are being made on the interior of the Ames building to give more room and better facilities for making the Victor automobile. Ever since the Overman company began the manufacture of the vehicle last August, there has been a steady enlargement of the plant. The present repairs are only a continuation of the repairs which have been made to accommodate the growth of the concern.

Mr. Overman said that the manufacturing capacity of the concern was nearly one machine per day. He said that the vehicle had become popular in New

York city and sales have recently been made to some of the best known people there. The repairs consist chiefly in relaying the floors, thereby making room for more machinery and furnishing a better place to show the vehicle. It is expected that before long the entire Ames building or its equivalent will be needed by the company.

MAKER PURCHASES GROUND

Joplin, Mo., Dec. 26.—This city is to have an automobile factory. Alfred Reynolds has closed a deal for the purchase of a lot at the corner of Third street and Kentucky avenue, adjoining the Kansas City Southern railroad tracks, where the factory will be built. It will be a two-story brick, 50x100 feet, with a basement. Mr. Reynolds, who was practically raised in Joplin, is a manufacturer of vehicles at 507 Virginia avenue. Associated with Mr. Reynolds is George Graves, a well known mechanic and a former railroad engineer. Mr. Reynolds' present establishment employs a large number of men, and he will continue the wagon and carriage business in addition to making automobiles.

DURYEA WILL MANUFACTURE

For many years Charles E. Duryea has been a wanderer on the face of the earth. His name is known wherever automobiles have reached, for he was one of the first to interest himself in their development and has stuck consistently to the work for many years.

Mr. Duryea is one of those men whose entire thought is given to the development of the mechanical problems he undertakes, and as a result he has failed to reap as great a share of the proceeds of his inventions as have been his due.

There are indications, however, that he is at last on the way to a more suitable arrangement of his affairs, for it is reported that in a company now forming he will have a greater interest than he has managed to obtain in previous ventures. Last spring Mr. Duryea accepted an invitation to go to Reading, Pa., and carry on some experiments in connection with his machines. It is now reported that the results have been so entirely satisfactory to the person who backed the enterprise that a factory is to be established in the neighborhood of New York. Pending the settlement of the location and other details Mr. Duryea will spend the greater part of his time at his old home in Peoria.

ANOTHER NEW YORK EXCHANGE

New York, Dec. 29.—New York seems likely to be liberally supplied with automobile exchanges and storage stations. To the big one now in successful operation on Sixty-sixth street and to the elegant establishment of the Winton branch on East Fifty-eighth street and the bronze and gold palace on West Thirty-eighth street, now almost completed, is to be added another big one West Thirfifth street, near Broadway.

The Herald Square Automobile Exchange, Nos. 147 to 151 West Thirty-fifth street, will occupy an entire seven-story brick building, with some 70,000 square feet of space at its disposal.. Exhibition and business facilities will be afforded for automobile manufacturers, in addition to storage facilities for individual owners. In the basement will be an accessories sales department and a repair shop. Manager Herbert F. Blake says he expects to offer special inducements in the way of supervision of vehicles to manufacturers.

MID-COUNTRY TRADE NOTES

Cleveland, Dec. 31.—Reference was made in a recent issue to the sale of A. B. C. machinery being conducted by George H. Bowler, a Cleveland machinery dealer. Mr. Bowler has just closed another deal whereby he will close out all the unavailable bicycle machinery at factories west of Buffalo, including plants at Syracuse, Nyac and other places. Altogether it is probably the largest lot of machine tools ever placed on the market at one time. The writer was shown a list of the tools to be disposed of in factories west of Buffalo, including the abandoned plants at

Buffalo, North Buffalo, Elyria, Indianapolis, Jackson, Mich., Cleveland and Toledo. It gave some vague idea as to the amount of machinery turned over to the American Bicycle Co. at the time of the combination. From the western factories alone Mr. Bowler has on hand over 1,200 pieces of machine tools, including small tools, special appliances for bicycle work, office fittings, etc., all of which he will dispose of. The valuation of the machinery list amounts to over $100,000, to which added the equipment to eastern factories, will amount to more than double that figure; not inflated values, but appraised figures. The sale is creating a decided sensation in the machinery market, not only in this city, but all over the country, and the goods are being disposed of at a surprising rate. During the past week over $5,000 worth was sold. Mr. Bowler states that the call from automobile manufacturers has been very large, and as much of the machinery is especially adapted to their work the sale will prove a boon to those who are not blessed with an abundance of capital. Later Mr. Bowler will hold sales in the cities above mentioned, with monthly sales from his Cleveland warehouse. The first will be held about January 15.

The Marshall & Huschart Machinery Co., of Chicago, will open a large Cleveland warehouse and office at 119 Bank street, that city, shortly after the first of the year.

Sipe & Sigler, manufacturers of the Willard storage battery, will shortly introduce a new battery for electric vehicle service. It will be similar in construction to their well known battery, but it will embody a few changes, which, it is claimed, will lessen the tendency to short circuiting, as well as increasing the life of the battery; it is also claimed it will give a more uniform voltage. The changes are such that the cells are slightly larger than in the old battery. The old type will be continued as heretofore, however.

Sales Manager Perrett, of the Diamond Rubber Co., is of the opinion that the company's new double tube tire will find great favor among automobile manufacturers. He says the especial advantage over the single tube tire lies in the fact that in case of a puncture a permanent repair can be made without vulcanizing and without removing the tire entirely from the rim. This is a feature which will be appreciated by those who have been forced to lay up their machines for several days and even weeks while tires were being vulcanized. The new Diamond tire will soon be on the market in all sizes.

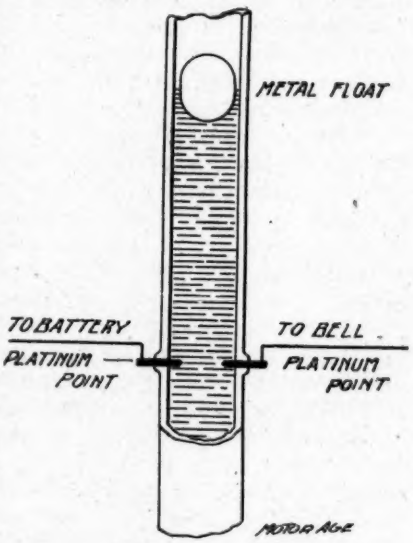
Those who are on the inside at the Winton factory say that President Alexander Winton is spending fourteen hours a day inside his experimental sanctum, the doors of which are kept bolted and barred to all except a chosen few. It is said that several wonderful machines are being designed and constructed within the walls of this shop and it is predicted that next spring will see a revolution of all existing Winton road records, not to mention exhibitions of speed which will open the eyes of even foreign enthusiasts. Mr. Winton has the racing fever worse than ever and will leave no stone unturned to keep at the head of the procession in this respect.

The Baker Motor Vehicle Co. reports that the demand for its handsome little runabouts is proving exceedingly satisfactory, considering the time of year, and that dealers in a number of large cities are anxious to handle the vehicle. Just at present the factory is very busy finishing up a new lot.

The recent arrangement whereby Elmer E. Sperry, the well known electrical engineer of this city, becomes electrical expert for the automobile department of the American Bicycle Co., referred to in a recent issue of Motor Age, appears to have been a much more important transaction than was at first announced. It appears that not only does the American Bicycle Co. secure the right to use Mr. Sperry's batteries in its vehicles, but the entire automobile business of the Cleveland Machine Screw Co., with which Mr. Sperry has been associated for the past two years, passed into the hands of the bicycle trust.

During Mr. Sperry's connection with the Cleveland Machine Screw Co. he

brought out a number of improvements in electric vehicle construction which have been favorably commented on by electrical experts, not the least of which is the remarkably efficient storage battery which has been described in these columns and which will be used on all electric vehicles built by the American Bicycle Co. in he future. There was also an improvement in the way of a steering handle. This device combines into one lever the brake, the controller and the steering lever. A system of locking devices makes it impossible for the operator to do the wrong thing, rendering a Sperry vehicle safe in the hands of the inexperienced.



Rodger's Low Water Alarm.

The Cleveland Machine Screw Co. spent a large amount of money in experiments and in equipping a plant, and it is said that the sum received for the business was a large one. The battery business will be carried on in the ball and pedal factory of the A. B. C. in this city, and the work of moving this department has already been completed. The carriage business will be carried on at Indianapolis, the plant being combined with the Waverly plant in that city. P. L. Tucker, manager of the Waverly plant, was in the city last week superintending the removal of machinery to Indianapolis. It is understood that the Cleveland line of vehicles will be continued as heretofore, and will be marketed in connection with the Waverly line. Mr. Sperry will have supervision of electrical construction and will radiate between Cleveland, Indianapolis and New York, making his home in this city.

The Cleveland Machine Screw Co. will confine itself exclusively to the manufacture of machine tools in the future and will shortly announce a line of new automobile machinery. The manufacturing department will be enlarged and the former automobile department will be utilized for this work.

An ingenious safety device for steam boilers has recently been invented by W. S. Rodgers, manager for the Brush Electric Co. at Cleveland. While it was not especially designed for use on automobiles, the inventor had the steam vehicle in view. The device is simple, consisting only of an ordinary water glass in which is inserted, when molded, a pair of platinum points, as shown in the illustration, being placed at the danger point of the water level. There is a metal float in the glass which when the water reaches the danger level forms a contact with the platinum points and closes an electric circuit, ringing a bell. At first glance it would seem that the water would act as a conductor and keep the circuit closed, but, according to Mr. Rodgers, the battery used is of such a low voltage that the metallic connection is required to ring the bell.

Mr. Rodgers has not yet completed arrangements for placing the device on the market, but it is probable it will be manufactured by a local concern. A pleasing feature of the device is that it is comparatively inexpensive.

As was recently announced in the Motor Age, Otto Konigslow, the Cleveland bicycle manufacturer, is now prepared to furnish a standard motor vehicle running gear, complete, and adapted for any type of power. An advance catalogue now being mailed describes the running gear.

Mr. Konigslow is also prepared to

furnish forged steering knuckles with front heels mounted on ball bearings, steel rims, spokes, chains, frame connections for running gears, compensating gears, pressed steel ball cups, etc. He is also designing a complete gasoline motor of the two-cylinder type, which he will be in a position to manufacture later in the season. It is quite probable that he will also build a complete vehicle for the retail trade.

The Akron Motor Carriage Co. of Akron, Ohio, expects within a few days to close a deal for the manufacture of a stock of 500 gasoline vehicles for an eastern jobbing house. The concern is said to be well pleased with the Akron vehicle, and it appears to be simply a question of whether or not the manufacturer can furnish the goods.

Strangers in Cleveland will now have little difficulty in locating the factory of the Winton Motor Carriage Co., once they are in the east end of the city. The immense sign which for years has designated the Brush Electric Co.'s plant has just been changed to read "Winton Motor Carriage Co.," and it can be seen for half a mile around.

NEW OMNIBUS LINE

The Back Bay district of Boston now has an electric omnibus line. It started on an experimental stage Sunday. The Boston Transit Co., now controlled by the New England Electric Vehicle Transportation Co., is the operator of the line. T. K. Cummings of the company said: "We shall start the line with eight or ten 'buses. Of course, this present attempt to start the line is merely a 'feeler,' nothing more, to see whether there is demand enough to warrant it. If there is business enough we shall extend the line. These experimental 'buses will be heated with the same kind of heater used in the electric cabs."

SHOW RIVALRY IN PHILADELPHIA

A lively tussle for supremacy is going on between the rival show promoters of Philadelphia. The show first announced is promoted by Mr. Le Cato, a dealer, and Mr. Schlichter, sporting editor of the Item. They are a hustling pair and promptly secured the indorsements of the two automobile clubs. They have rented seventy-five of the eighty-six spaces. Then came the Cycle Board of Trade, secured another building, and announced a show to be held a week ahead of the other people. What luck they have had in securing exhibits has not yet been announced.

NEW CANADIAN MANUFACTURER

The prospectus of the Montreal Automobile Co. has just been issued. The capital is to be $250,000, divided into 250,000 shares of $1 each. The provisional directors of the new company are: H. Lamontagne, Hon. B. Berthiaume, F. Lapointe, Louis Bolduc, J. U. Foucher, E. Lepage, R. L. de Martigny, A. Guimond. The directors of this company began operations in May last, the object being to establish an automobile factory in Montreal, as at that time there was none in Canada. They claim that on account of labor being cheaper in Canada they can turn out the same machines at a great deal of saving of cost. It is stated that they expect to manufacture steam carriages which can be sold as low as $450.

A CAR LOAD FOR IOWA

Des Moines, Ia., Dec. 27.—The Wells Mfg. Co., makers of disappearing carriage tops, has concluded to embark in the automobile business and has installed a carload of automobiles in its salesrooms. This is the first carload consignment of the new vehicles to be received in Iowa.

OIL FOR MOTORS

The E. R. Thomas Motor Co., Buffalo, has put out a lubricating oil under the make of the Thomas Motor lubricant, which is specially prepared to meet the requirements of high-speed air-cooled motors. The new lubricant is proof against carbonizing, does not gum and is tested to 700 degrees. Remarkably successful results are claimed for it wherever used. This lubricant has been adopt-

ed after a series of exhaustive tests of all the different kinds known.

STEAM VEHICLE CO. GETS FACTORY

It has long been reported that the factory once occupied by the Worcester Cycle Mfg. Co., a concern which made quite a splurge in the business during a brief career, would be occupied as an automobile factory. The whole outfit, which includes a great deal of property beside that occupied by the bicycle company, was sold last week for $7,200 in addition to the incumbrance, which amounts to $130,000. The purchaser was Ellsworth I. Chapman of New York. The part of the plant formerly occupied by the bicycle makers will be used by the Steam Vehicle Co. of America.

NEW INCORPORATIONS

Louisville, Ky.—Louisville Automobile Cab Co. of New Albany, Ind. Capital, $25,000. To operate a cab and transfer service. Incorporators, P. Arlund, J. A. Windsor, W. C. Sarvant and C. Dollum.

Articles of association of the Bantam Mfg. Co., of Litchfield, Mass., have been filed with the secretary of state. The corporation is organized to manufacture wheels, roller bearings, reduced tubing, motors and motor vehicles. The capital stock is $3,000. A majority of the directors are Charles H. Coit, B. S. Keefer, C. R. Duffie, W. W. Bissell.

WANTS TO BUY BIG VEHICLE

Clarksville, Tenn., Dec. 28.—Col. John F. Shelton is deeply interested in automobiles for the public service and recently attempted to ascertain what has become of the proposed stage line between Nashville and Asheville City. Nothing could be found of the promoters. The colonel is on the lookout for a big vehicle, but for what purpose is not stated.

BRIEF NEWS OF THE INDUSTRY

This week the company which promises to employ 5,000 men in the manufacture of autos will locate at Paterson, N. J. Last week it was Louisville and the week before that Detroit. This will-o'-the-wisp concern is now reported to be the Rogers Locomotive Works and Joseph Leiter has become mixed up in the deal. The thought that strikes the observing person is that the company, whatever it is, has engaged an ingenious press agent.

Illinois Electric Vehicle officials state that the company is enjoying a fine business just now, the holiday patronage being extremely good. The management is expecting a very favorable effect from important changes it is now preparing to inaugurate in the shape of mechanical improvements. The improvements may not be ready for use until the middle of the summer, when they are expected to bring about a great reduction in operating expenses.

The Indianapolis News expresses the belief that the coming show at the Coliseum, Chicago, will eclipse the one recently held in New York. As a selling exhibit it is quite likely that it will, for the promoters are leaving no stone unturned to draw buyers from all parts of the country. The Central Passenger Association has granted reduced railroad rates and other associations are expected to follow suit.

A story is going the rounds that the Hoffman Bicycle Co., of Cleveland, which also manufactures autos or is getting ready to do so, is asking for a cash bonus of $100,000 and a subscription of a similar amount to the capital stock of the new company, as an inducement to change its location.

Following the announcement that the Sterling plant has been purchased for use as an auto factory, comes another to the effect that three mechanics in Kenosha, Wis., are working on a compressed air machine, of course with the usual assurances of producing something that will lick creation.

A special camera to determine the speed of vehicles has been devised in France.

The Pennsylvania Electric Vehicle Co., whose vehicles meet all B. & O. trains, has adopted the following sched-

ule of prices: One and a half miles, 50 cents; each additional mile or fraction thereof, 30 cents; by the hour, for shopping and calling, $1; for pleasure driving, $2.

The R. C. Wall Mfg. Co., of Philadelphia, now makes motor vehicle goods exclusively. A representative seen by a Motor Age man last week declared that they were doing a rushing business and working seven days each week.

M. Fitzhugh, of the Philadelphia Gas & Gasoline Engine Co., is enthusiastic over motor prospects, but says he will manufacture only in a small way for the present, making motors at a reasonable price. He employs ten men.

The Albert Lindholm Co., Sioux City, Iowa, has placed an order for an automobile delivery wagon and an automobile road cart—the first orders for autos which have been placed by Sioux City people.

Notice has been issued by the International Motor Wheel Co. that it has removed to 143 West Fifty-first street, New York, the quarters formerly occupied by J. B. Brewster & Co.'s carriage factory.

The Baldwin Cycle Chain Co., of Worcester, Mass., announces that it has been granted a patent on its new roller detachable chain which is being manufactured in automobile as well bicycle patterns.

An automobile service will be established between Sea Cliff, L. I., and its railway station, a mile and a half distant, as the attempt to establish a trolley line has ended in failure.

Janney, Steinmetz & Co., of Philadelphia, recently told a Motor Age man that they are overloaded with orders. Mr. Janney is also interested in the National Pancoast Ventilator Co.

The Chicago Public Library has now in use seven wagons for the delivery of books. At a meeting of the directors last week a proposal was submitted to substitute electric vehicles and was received with favor. An investigation of the plan is now in progress.

A South Bend (Ind.) paper says that a company engaged in the manufacture of gasoline engines and motors at Chicago is negotiating with a view to locating there.

C. G. Fisher & Co., Indianapolis, are the state agents for the Mobile and are doing considerable touring and interesting the people of the neighboring towns.

The proprietors of the Orange street bus line, at New Haven, Conn., have decided to adopt electric cabs and will start in the near future with three.

The Oxford Mfg. Co., of Philadelphia, has abandoned the Smith Motor and adopted a new one, which it is now applying to a bicycle and tricycle.

John Chapman, of Winona, Minn., wants to commence making autos and has made a proposition to people at Rochester to that end.

The General Electric Automobile Co., formerly of the Bourse building, Philadelphia, now has its offices at the factory, Manayunk, Pa.

M. Cramer and W. H. Coffinberry have started an automobile agency at Garrett, Ind., and say they have secured two desirable agencies.

H. B. Hart, of Philadelphia, has applied for a patent on a new vaporizer, and says he will introduce it about March 1.

The council of Alliance, Ohio, has appointed a committee to investigate automobiles for police patrol purposes.

Albert M. Spear, of South Portland, Me., has become state agent for a line of vehicles.

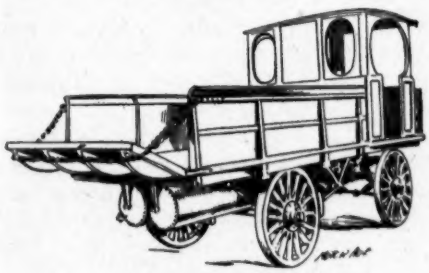
Osmond Barringer has taken the agency for the Locomobile at Charlotte, N. C.

INFORMATION FOR BUYERS AND BUILDERS

ECONOMY OF STEAM TRUCKS

One of the most promising phases of the automobile industry is the avidity displayed by business men of all kinds to utilize the self-propelled wagon for commercial hauling. Back of the manufacture of electric, steam and gasoline delivery wagons and trucks is a demand which, while infantile at present, is steadily growing and assured of perpetuation. Automobiles for business open an almost unlimited field of manufacture, on account of the manifold uses and requirements of such vehicles.

Experience has already shown that the economy of self-propelled business wagons will sustain their utility after the initial advertising benefit derived



A White Steam Freight Truck.

from them has dwindled out. Perfected these wagons may not be, but it has been demonstrated that various forms are not only speedier and more convenient than horse drawn business vehicles, but are actually cheaper to maintain and operate. It is the dollars and cents argument which always captures the business man, and the fact that electric, gasoline and steam wagons will deliver goods, transport stock, and in other ways accomplish the wagoning of commercial concerns cheaper than it has formerly been accomplished, assures the lasting success of the business automobile.

Steam trucks of large size for heavy hauling have been built in considerable numbers in England and continental Europe, and their introduction into this country in the form of home-built machines has commenced. Several large electric trucks are already in use in eastern cities. The steam trucks are not marvels of beauty, but they are substantial and economical conveyances. Hence they are useful and desirable. Visitors to the Central Palace automobile exhibition in New York city noticed the huge Thornycroft van of the Cooke Engineering & Machine Co. This was the first of the Thornycroft wagons which are now being built here. It is one of the evidences of progressing American manufacture of steam freight wagons. Another evidence is the steam trucks now being produced by Paul H. White of Indianapolis, who has been working for several years on vehicles of this description, and who now states that he has finally completed his experimental work and is manufacturing. His company is the Paul H. White Engineering Works. The accompanying illustration shows a White steam truck.

The wagons weigh from 4,000 to 8,000 pounds, depending upon their capacity. The body overhangs the wheels in all directions. The engine and machinery are placed entirely under the floor and the driver's position is in the left side of the enclosed boiler hood. The fuel bunker extends across the entire front of the wagon and opens in front of the driver. The available platform area is usually 10 feet by 6 feet 8 inches. Coke is recommended as fuel on account of its cheapness and because it does not produce smoke, and unless otherwise specified the burners are arranged for it as fuel.

The engine is a four-cylinder, single-acting compound of such design that there are no joints subject to high-pressure steam. There are no packing glands, hence no packing of any sort. In starting the engine the foot is placed on a small lever which gives high-pressure steam to all the cylinders, making

a powerful starting torque; by removing the foot the engine is converted into an economical compound engine, the efficiency of which may be further increased by adjusting the cut-off in the cylinders, this being easily done with the reversing lever directly in front of the driver.

The average speed loaded is about five miles per hour, and is entirely under control with one lever. Transmission is by chain and gears; the usual compensating gear is entirely enclosed, and runs in an oil bath, transmitting motion through two chains to the rear driving wheels. The wagon has a multiplying gear which doubles the normal leverage of the engine. It is effective in pulling out of mud holes or up stiff grades with full loads. With this arrangement it is possible to lock the compensating gear when one wheel gets into a soft spot and slips, thus increasing materially the traction of the wagon. The wheels on the smaller wagons are 40 inches in diameter, constructed with steel tires and steel self-oiling hubs. The tire widths are in proportion to the loads. The wagons for a 4,000 pound load have tires 4 inches wide on the drivers and 3 inches wide on the front wheels.

Mr. White has compiled some convincing tables comparing the expense of maintaining respectively horse-drawn and steam trucks. They show a decided advantage for the latter, both in the matter of cost of operation and effectiveness and capacity of work. One of these calculations is appended:

"It has been found that a horse cannot work day after day at more than a 2½-mile rate per hour for eight consecutive hours, with a ton load. It will not do as much on an average, but to give it every advantage in making the comparison, it is assumed that the horse can do this. Thus, for a two-ton load, with two horses, we would have as follows: 2½ x 8 x 2 x 300 equals 12,000 ton miles. Say you are running two such teams; then the annual ton mileage would be 24,000 ton miles, which is equaled by one 4,000-pound motor wagon, working the same time, but at five miles per hour. 5 x 8 x 2 x 300 equals 24,000 ton miles."

In these two propositions the same amount of transportation is obtained. The cost of each is reckoned by Mr. White as follows:

Four good dray horses	$ 600
Two good sets harness	100
Two good wagons	300
Total first cost	$1,000
Interest on above for 1 yr., 5 per cent.	$ 50
Depreciation, 20 per cent	200
Two men at $10 per week	1,040
Horse feed at $12 per mo., 4 horses	576
Shoeing, $2 per mo., 4 horses	96
Running expense for one year	$1,962
First cost of 4,000 pound motor wagon, list price	$2,500
Interest on same for 1 yr., 5 per cent.	$ 125
Depreciation for 1 year, 12 per cent	300
Wages of one man $12 per week	540
Oils and waste	10
Fuel, 1,200 bushels of coke at 8 cents.	96
Running expense for one year	$1,071

HAMPDEN BICYCLE MOTOR

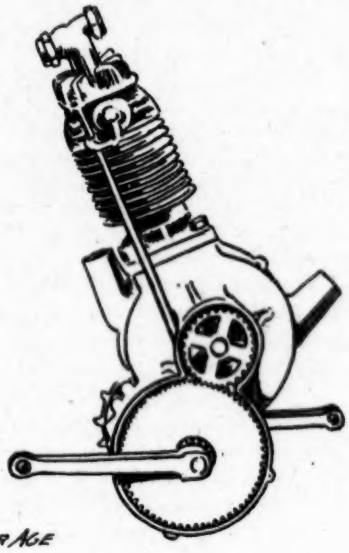
It has been previously pointed out in the Motor Age that the future standard type of motor bicycle will, in all probability, possess the distinctive feature of having the motor crank box built into and forming a part of the frame; that the bottom bracket of the frame is the most suitable position for it and that the "bolted-on" motor cannot prevail long against built-in construction.

The latest motor to be introduced for the latter system of construction is that now offered by the Hampden Mfg. Co., of Springfield, Mass., and which is here shown. It develops one horsepower and possesses several distinctive points.

In the illustration the motor is shown with the gear case cover removed, exposing the spur gears, which not alone form the usual two-to-one gear, but are also the driving gears. The smaller gear is fixed upon the driving shaft; the larger gear is ball bearing and runs free upon the crank axle, bearing upon its inner face the cam for lifting the exhaust valve, and the cam for making and breaking the ignition spark. Secured to the hub of this gear is an eight-tooth driving sprocket, to be connected to a sprocket on the left side

of the rear hub by means of a chain. On the right-hand side of the crank chamber is situated the usual driving sprocket. A coaster brake rear hub is necessary.

The proportions of the motor are as follows: Height over all, 17 inches; weight complete, 34 pounds; speed, 1,200 to 1,500 revolutions; cylinder, 2 3-16-inch



The Hampden Motor

bore by 2⅝-inch stroke; width of flywheel case, 2⅝ inches; width at widest part (crank axle length), 6⅛ inches. All bearings are of phosphor bronze and are larger and wider than usual in this size of motor.

IDEAS OF COMMISSIONER OF PATENTS

Washington, Dec. 29.—"The motor vehicle will become as great a fad in a few years as the bicycle, and will outlive it, because of its universal utility," said Commissioner of Patents Duell to a group of newspaper men recently assembled in his office. "A few years ago the patent office was fairly deluged with applications for patents for new ideas and improvements in bicycles. To-day we are passing through much the same experience. Hundreds of applications are being received each week and I look for a revolution in the motor vehicle art within a short time. The inventive genius of American inventors is second to none in the world, and our inventors are evolving even now a vehicle which I do not doubt will rival the world. Our makers of motor carriages have entered upon the new industry with a valiant spirit, and have already set new and higher standards of construction, finish and general excellence."

"Do I understand you to mean that already there is an application pending for a vehicle that is so vastly superior to those now in use as to indicate a revolution in the industry?" asked the Motor Age man.

"Not exactly that," said the commissioner. "I cannot say what applications are pending, nor am I in a position to say that the almost perfect horseless carriage—or, as it is more correctly termed, the motor vehicle—is assured. But what I do say is that within a few years there will be devices very much more perfect than at present. Ten years from now you reporters will see ten vehicles where you see one now."

"What is the desideratum in a motor vehicle?" queried the Motor Age man.

"A vehicle that will combine simplicity and durability with cheapness. By simplicity I mean no complicated mechanism, heavy and cumbersome and liable to get out of order; durable in that it will wear a reasonable length of time; and cheap—well, reasonably enough to permit its purchase by those who now have to content themselves with a horse and buggy. These are the great difficulties which must be overcome before the motor vehicle becomes universally used, but I doubt not but what the inventive genius of those who are interested in the future of the motor vehicle will at no late day solve the problem."

Commissioner Duell is a well posted man and it may be of more than passing interest to many to learn that he is strongly inclined to believe that the motor vehicle of the future will be operated upon the storage battery principle.

WEEKLY PATENT OFFICE BUDGET

TWO TRANSMISSION GEARS WHICH PROVIDE FOR MOUNTING THE MOTOR RIGIDLY ON THE FLOOR OF THE VEHICLE BODY—CONDENSING THE EXHAUST OF STEAM CARRIAGES

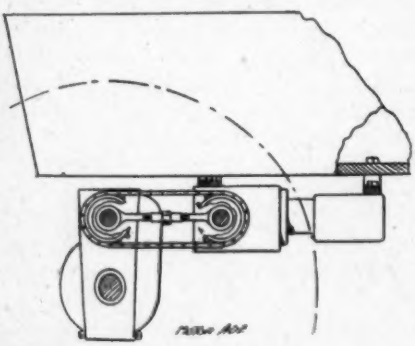
The three standard types of vehicles are represented in the last batch of motor vehicle patents issued by the patent office. For electric carriages one inventor offers a gearing with flexible driving connection; for gasoline machines another presents a variable speed transmission device and a system of motor and gear support which insures constant relations between the two; for steam carriages a third patentee has produced a combined dashboard and exhaust condenser.

PIVOTAL GEAR BOX

Letters patent No. 664,809, dated December 25, 1900, to George P. Dorris, of St. Louis; transmission gearing for motor vehicles. Nine claims allowed.

While this invention includes several novel features in the way of driving clutch and variable speed construction, the most readily noticed novelty in the device is the method of support of and connection between the motor and the transmission gear box or housing.

The motor is secured rigidly in a horizontal position to the under side



Dorris' Pivoted Gear Box

of the vehicle body. All of the speed change and differential gear parts are contained in a housing disposed normally in a substantially vertical position on the rear axle, which passes through the casing near its bottom. The countershaft, to which the motor shaft rotation is communicated by sprockets and chain, is mounted in the housing near its top. Pivoted to the motor axle, outside the crank box, is the forward end of an adjustable-length rod whose rear extremity is similarly pivoted on the counter shaft of the transmission device.

The entire gear housing being virtually pivoted on the rear axle and the countershaft in it being kept in constant relation to the motor shaft by the pivotally connected tie rod, the housing will swing on the rear axle to accommodate the movements of the vehicle body relative to the rear axle. The adjustability of the tie rod permits of its being regulated for length after the machine has been assembled partially and the correct normal distance between the motor and the counter shafts determined.

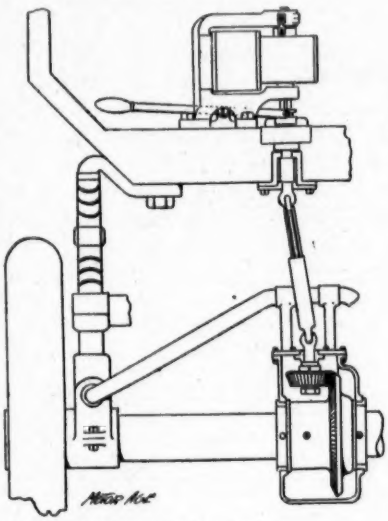
A frictional driving clutch is employed in this connection, and in the gear housing on the rear axle are spur gears furnishing variable speed and transmitting motion in such a manner that none of the gears are in mesh except when the carriage is running. The driving gear is controlled by two levers.

HOPEWELL'S DRIVING GEAR

Letters patent No. 674,478, dated December 25, 1900, to Frank B. Hopewell of Cambridge, Mass.; driving shaft and clutch for motor vehicles. Six claims allowed.

Although the experience of nearly all of the present manufacturers of electric vehicles has demonstrated that it is the most practical method to mount the motors in some manner on the running gear frame so that transmission

from the armature shaft to the driving axle will not be influenced by the movements of the vehicle body relative to the running gear, Mr. Hopewell has devised means whereby flexible driving connection is furnished between the rear axle and a motor supported by the floor of the carriage body. His invention is



Hopewell's Flexible Tranimission

simply a combination of well known mechanical methods.

The motor is so supported that the armature shaft will be in a vertical position. The shaft is divided and the upper and lower sections are connected by a pin clutch which is adapted to be operated to throw the motor in and out of driving connection by means of a lever arranged conveniently for the driver of the carriage.

On the rear axle is a casing, within which is a pair of engaging bevel gears, one rigidly secured to the axle and the other mounted on the lower end of a vertical stub axle maintained in the upper portion of the gear housing. Between the upper end of the stub axle and the lower end of the divided motor shaft is a telescoping two-part transmission shaft with universal joints at its end connections. The sections of this shaft are free to slide one upon the other.

The device accomplishes two purposes. It affords ready means for throwing the rear axle out of driving relation without stopping the motor, and it furnishes flexible connection between the axle and the motor shaft. The latter feature permits placing the motor in the vehicle body. Considering the lack of necessity for either purpose in the transmission gearing of an electric carriage, the toggle joints, extensible drive shaft and gear housing do not form a very valuable mechanical combination.

The patent sheets do not show whether one motor is supposed to drive both rear wheels. If it is, then the inventor has, according to the patent drawings, neglected to provide a differential gear. If two motors, each arranged as shown, are to be employed, the operator would be compelled to manipulate two levers of the same kind in order to control the vehicle. It would be highly inconvenient to try to steer and operate two levers at the same time.

DASHBOARD STEAM CONDENSER

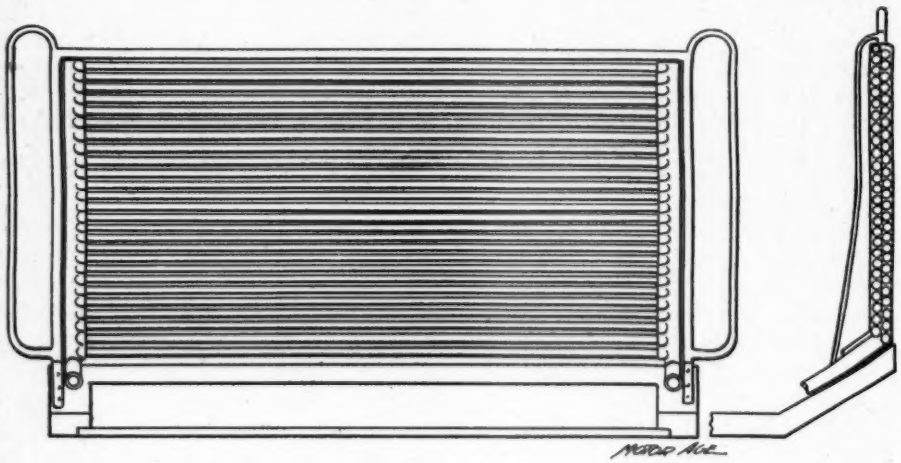
Letters patent No. 664,373, dated December 25, 1900, to Leon F. N. Baldwin of Providence, R. I.; combined condenser and dashboard for steam vehicle. Three claims allowed.

It is one of the most interesting problems of steam carriage construction to dispose of the exhaust steam so that it will not be visible when discharged. Recently there have been evolved several schemes for passing the exhaust along through frame or other exposed tubes of considerable length, so that it will be practically condensed before being discharged into the atmosphere. The present invention relates to a condenser which serves also as a dashboard for the vehicle.

At each side of the dashboard frame is a vertical pipe having a continuous longitudinal boss along its inner side. In this boss is formed a double row of closely arranged holes, and between the registering pairs of holes in the two side pipes are placed cross pipes. One of the side pipes is connected with the engine exhaust pipe and the other is connected with the boiler water supply tank.

The steam passes into the dashboard

condenser and is forced through the several cross pipes. On account of the currents of air which strike these pipes when the vehicle is moving, they are sufficiently cold to condense or nearly condense the steam as it passes through them. The inventor states that condensation is sufficiently perfect to allow the discharge to be made directly into the water tanks. If such discharge of the condensed steam is possible, then, of course, there is no visible exhaust into the atmosphere. Back of the dashboard condenser is a metal plate curved to conform approximately to the shape of the dash and front portion of the carriage body, but separated from the dash by a space of about two inches. This deflector prevents the currents of air which pass between the condenser from striking the occupants of the carriage. The deflector also acts as a guard to prevent the vehicle occupants from coming in contact with the pipes and being burned in case they should be hot.



BALDWIN'S COMBINED DASHBOARD AND EXHAUST STEAM CONDENSER

GOOD, THOUGH NOT AUTOMATIC

The latest development in the rowing machine line is the work of Dr. Dudley Allen Sargent, director of the Hemingway gymnasium at Hartford. There is nothing new about the rowing machine. A number of gentlemen made one for four people, in Newark, N. J., as long as twenty years ago, and about ten years ago a number of singles were made on which famous oarsmen rowed —or rode—races at Madison Square Garden and elsewhere.

But the fact that the worthy doctor is mistaken in supposing his machine to be new does not alter the fact that it may be made a valuable addition to the apparatus of the day. The doctor claims that a much better development of the body can be brought about by this new machine than by the old forms of apparatus. It is an all-round developer, and especially good for the back, abdominal regions and waist, which he considers the weak points of American people. It combines pleasure with the process of muscle developing, and thus the mechanical work of gynasiums, which is so tedious, is done away with.

The Inomotor, which is a good deal like a sliding rowing seat in appearance, is intended to impel boats, carriages and bicycles by means of arm and leg power. The operator sits on the sliding seat, puts his feet in the sliding foot rest and grasps a lever in each hand. These levers are connected by four adjustable rods to the sliding seat and sliding foot rest, which are in turn connected by a power-applying rod to the crank, a gear or a sprocket wheel, as the case may be.

Dr. Sargent has also put a screw propeller and paddles in place of the wheels, so that a boat can be driven through the water. For indoor use he takes off the rubber-tired wheels which are on the outdoor machine, and puts in their place small iron wheels, so that the force which would drive the machine forward a mile out of doors would only advance it some twenty-five yards in the gymnasium. Thus indoor races can be held.

PROFITABLE IN BUSINESS

The automobile seems to be more than a mere fad, says the Philadelphia Record, and the wealthy classes are not alone in their enthusiasm over the new vehicle. From all sorts of unexpected sources come inquiries and requests for information on the subject. "I am thinking very seriously of getting one," said a downtown milkman the other day. "I'll tell you the reason why. Within the past year I have lost two horses. One cost me $150 and the other cost $165. I could almost buy an automobile for that, and the automobile wouldn't die on my hands. It wouldn't eat its head off, either, nor would it fall down and break its legs. So you see it isn't so funny for a milkman to have an automobile as it sounds."

MISCELLANEOUS

Advertisements under this head 5 cents per word, cash with order. Express orders, post office orders, or postage stamps accepted.

FOR SALE

FOR SALE—Waverley Electric and a Winton Gasoline Automobile, cheap; fine condition. REICHERT'S MOBILE CO., New Haven, Conn. 1

FOR SALE CHEAP—Orient Autogo, DeDion 2¼ motor. F. I. CLARK, 513 W. Baltimore St., Baltimore, Md.

FOR SALE—The Automobile Storage and Repair Co., 57 West 66th St., New York, have new and second-hand steam, gasolene, and electric carriages constantly on hand and have always some special bargains.